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AUTHOR Mizuno, Harumitsu
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ABSTRACT

The purpose of this paper is to examine the process of interlanguage development in Japanese adult learners of English as a Second Language (ESL) in acquisition-poor environments. A total of 353 subjects were divided into 9 groups based on their level of English proficiency and tested to determine: (1) what types of errors Japanese adult ESL learners make as they acquire the English article system; (2) when these errors appear and disappear in the developmental process of interlanguage; and (3) why such errors especially occur in Japanese adult ESL learners in acquisition-poor environments. The study found that co-occurrence and word-order errors sharply decreased once students reached proficiency level three. Underextension and substitution errors were sharply reduced from levels one to four, and persisted in the interlanguage at level nine. Overextension errors were predominant above level four and persisted in the interlanguage. Substitution errors were sharply reduced from level one to level four and persisted at level nine. These findings have important pedagogical implications regarding the organization of the English-language syllabus in Japanese schools. (Contains 63 references.) (MDM)

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紀　要

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A Psycholinguistic Approach to the Article System in English

Harumitsu MIZUNO

INTRODUCTION

A number of studies on morpheme acquisition during the last decade have yielded abundant fruit for developing second language acquisition theory. Research by Dulay and Burt (1972, 1973, 1974b, 1974c), examined the nature of errors and the order of morpheme acquisition by Chinese and Spanish-speaking children learning English as a second language. Their findings are, by and large, consistent with the following claims:

(i) Language transfer plays no significant role in L2 learning by children;

(ii) Certain grammatical forms are acquired in similar order regardless of the language background of children.

The first claim that language transfer plays no significant role has been supported by other studies, including Ervin-Tripp (1974), and Ravem (1968, 1970). Likewise, the second claim was validated, among learners of various ages, native languages, and educational backgrounds, studied longitudinally and cross-sectionally in spoken and written production, by many researchers, Bailey, Madden, and Krashen, 1974. They claim that there is an orderly sequence of aquisition common to all language learners (Krashen, 1974; Krashen, Madden, and Bailey, 1978), and support the Natural Order Hypothesis, which states:

(i) The child is guided more by input than by previous learning

experience, viz. the NL (Wagner-Gough and Hatch, 1975)

(ii) L2 learning by children, is "an active process of mental organization (Dulay and Burt, 1974d).

(iii) There is a characteristic order of acquisition for certain structures of a given language (e.g., English) among L2 learners regardless of NL background.

These implications are integrated into the Creative Construction Hypothesis (Burt and Dulay, 1975) that language learners gradually organize the language they hear according to rules which they construct to generate and understand sentences.

In spite of the impact that morpheme acquisition studies have had on current SLA theory, however, some researchers claim that grammatical morpheme data do not provide the best insight into the orders and processes of second language acquisition.

Corder (1972) noted that a descriptively adequate account of the learner's interlanguage (IL) must use his grammatical intuitions about his own language system. Most error-based studies have used only productive data, rather than judgmental data, except for several cases (Bialystok, 1980; Schachter, et al., 1976). Schachter and Celce-Marcia (1977) argue that the biased nature of sampling procedures is a potential weakness of morpheme acquisition studies. In addition, Brown (1980: 246) adds that "A model that highlights 'creative construction' as the antithesis to an interference model ignores vast domains of the total procedures" of L2 learning, and claims the grammatical morphemes "form a very small and almost insignificant proportion of total language upon which to base global judgments" (Brown, 1980: 184).

Articles, prepositions and the tense system are typical cases within the structure of English that remain areas of indeterminacy for many L2 learners (Jain, 1974: 205). This may be because they do not submit themselves to any generalization based on some consistent reg-

ularity; the system of the second language in these areas demands a combination of decisions at several levels of syntax. Rutherford (1983) claims that it is *discourse* and not syntax which guides the overall development of an L2. Furthermore, Tanaka (1983) asserts that *lexico-semantic transfer* is highly sensitive to syntactic constraints.

As a demonstration that language transfer appears more significantly in the *lexico-semantic* domain, Tanaka (1983) conducted research on acquisition of English locatives by Japanese L2 students in Japan, which confirmed this hypothesis. In this connection, we conducted error-analyses of compositions written by 17 Japanese high school students (aged 14 to 15) who studied English for about three years in a formal classroom setting in Japan. Around 60 per cent of 320 errors were those of function words. Most of these function words errors are related to the problem of the use of articles and prepositions. We are primarily concerned, in the present study, with the acquisition of English articles by Japanese adult ESL learners in Japan.

Most research on English articles have not been empirical, but rather had been limited to explanations of the article system per sé (Allen and Hill, 1979; Christophersen, 1939; Hewson, 1972; Howkins, 1977a, 1977b, 1978), illustrating examples of the different uses of articles (Jespersen, 1949; Kanaguchi, 1970; Kumayama, 1985; Poutsma, 1926; and Yotsukura, 1970). Although there are many studies of the acquisition of English articles (Brown, 1973; Maratsos, 1974, 1976; Warden, 1976), most of them concerned with first language acquisition of the article system in English, or pedagogical suggestions concerning the English articles (Huckin and Olsen, 1981; Kaluza, 1968, 1973; McEldowney, 1977; Pica, 1983; Whitman, 1974). Empirical research on the acquisition of the articles by L2 learners has barely begun.

Above all, in order to improve the teaching of English articles, which are a major category of persistent errors made by Japanese

learners, it is a pressing need to elucidate the differences in the pattern of thought between Japanese and English. To put it another way, to eliminate errors that are produced by employing an item of the TL within the syntactic structure of the NL, it is necessary to clarify not merely the semantic functions of the articles, but also the nature of errors based on the comparison of two languages in contrast. On this basis, we conducted a preliminary study, focusing on the knowledge of the use of articles among ESL students and teachers of English in Japan. We asked 100 of college students and teachers respectively three questions in the form of a short questionnaire.

The results indicated that both groups have a limited understanding of the definite and indefinite articles, that they do not know the principle for the use of zero articles, and that they have difficulty in discriminating the use of the *a*(*n*)-form from that of the *the*-form.

Motivated by the preliminary study, we decided to examine the whole process of interlanguage development in Japanese adult ESL learners in acquisition-poor environments. In this regard, we aimed to elucidate the nature of errors in the use of articles, to clarify the constraints on their role in the developmental process of the learners' interlanguage, and to analyze the sources of these constraints. In this paper, we use the term "error" in the sense of Corder (1967) and leave errors of performance (mistakes) out of account. In addition, the term constraints will be used to mean any kinds of parameter which facilitates interference.

Regarding the acquisition of the use of articles, the following questions arise:

(1) What types of errors do Japanese learners make as they acquire the article system in English?

(3) When do they appear and disappear in the developmental process of their interlanguage?

(3) Why do such types of errors occur in Japanese adult ESL

learners in acquisition-poor environments?

We first assumed that, based on the three categories in Richards' list (1974: 186-187) and the two in Yamada's list (1983), there are at least five types of errors in the use of articles that Japanese adult ESL learners are likely to produce in the process of their interlanguage development.

Therefore, we term these five types of errors in the use of articles as follows:

(1) co-occurence errors: juxtaposition of the articles and deictic words:
  (i) I like *a* this box.
  (ii) *A* that pen is in the box.

(2) word-order errors: inversion of the order of articles and the succeeding adjectives:
  (i) That is new *a* book.
  (ii) This is big *a* (pencil).

(3) underextension errors: Omission of the articles:
  (i) She is ø mother of that boy.
  (ii) He was ø brave man.

(4) overextention errors: the use of articles instead of ø:
  (i) After *the* school, after the breakfast
  (ii) *a* holy places, *a* human beings

(5) substitution errors: *a* used instead of *the*, or vice versa:
  (i) *a* worst, *a* best boy in the class
  (ii) *a* sun becomes red

Concerning the progress of these errors in the developmental process and their causes, the present study was conducted to provide evidence to support the following six assumptions:

First, learning occurs when the learner relates new information to previous acquired knowledge (Ausubel, 1968; Brunner, 1966, Gagnè, 1972, 1974; Piaget, 1963). In terms of this framework

of cognitive theorists, L2 learning is a creative construction process involving a hypothesis-testing activity. The learners' knowledge about L1 constrains his initial hypothesis as well as the process whereby he acquires knowledge of the TL (cf. Schachter, 1981; Zobl, 1982). Although the learner tends to search out one-to-one correspondences between the NL and the TL, if there is a semantic discrepancy between what he wants to express in the NL and what he can actually express in the TL, semantic errors occur as a matter of course.

Second, at an early stage of L2 learning, the learner tends to have a holistic learning set to the TL (Krashen, 1981). Hence, the learner processes nominals as undifferentiated units where the articles are not discriminated from other determiners. As a result, in generating an English NP, they are likely to apply the less restrictive of paradigmatic relations in the Japanese NP. In addition, when they communicate with others in the TL, they try not merely to relate the information in the TL to their knowledge in the NL, but also to restrict the meaning of a word or a phrase in the TL. Thus, learners tend to form a formula such as THE = SONO (i.e., THAT) and A(N) = HITOSUNO (i.e., ONE), and use them in the framework of Japanese syntax. This causes the L2 learners to make co-occurrence errors that put the articles and other deictic demonstratives in juxtaposition within the same NP. With time their learning set develops and they become more aware of the paradigmatic rule in English. Thus, at the early intermediate level this type of error will disappear because it is more involved in the syntactic rather than the lexico-semantic domain.

Third, some Japanese elementary ESL learners, when they try to express themselves in the TL, may tend to apply the flexibility of Japanese word order to the TL. Some of them also may tend to apply mirror-image relations (Smith, 1978), which are widely observed between English and Japanese, to the syntagmatic relations between nouns

and their modifiers in English. As a result, they make word order errors that invert the order of the articles and the succeeding adjectives in the same NP. This type of error seems to terminate at the early intermediate level because it is a rather mechanical or formal one, and less involved in the lexico-semantic domain, like co-occurrence errors.

Fourth, at the intermediate level, Japanese ESL learners become partially analytical, and begin to pay attention to function words like articles. However, even though they try to understand the meaning of the articles in relation to linguistic alternatives in Japanese such as the numeral 'hitotsuno,' the demonstrative 'sono,' and particles 'wa' and 'ga' and so on, they sometimes fail to link these linguistic alternatives in Japanese to the articles. As a result, they may produce underextension errors in the form of simplification or avoidance of the articles as a communication strategy (Blum and Levenston, 1978; Corder, 1981; Kleinmann, 1977). A phenomenon observed in the case of other grammatical morphemes as well. In addition, the nature of context-dependent Japanese syntax keeps the learners from using the articles in obligatory contexts. Since such pragmatic constraints, which are more sensitive to interlingual transfer than morphological and syntactic constraints, have a heavy impact on Japanese adult learners of English, this type of error seems to remain persistent in their inter-language.

Fifth, as their perception becomes specific and analytic, Japanese ESL learners will begin to make overextension errors that supply articles in obligatory contexts of zero article. At the early advanced level, the learners come to possess an anlytic learning set, and begin to notice the meaning of zero articles through some negative feedback from their environment. Once they understand the meaning of zero articles, this type of error seems to sharply decrease. Otherwise, such changes do not disappear because they are involved in semantic

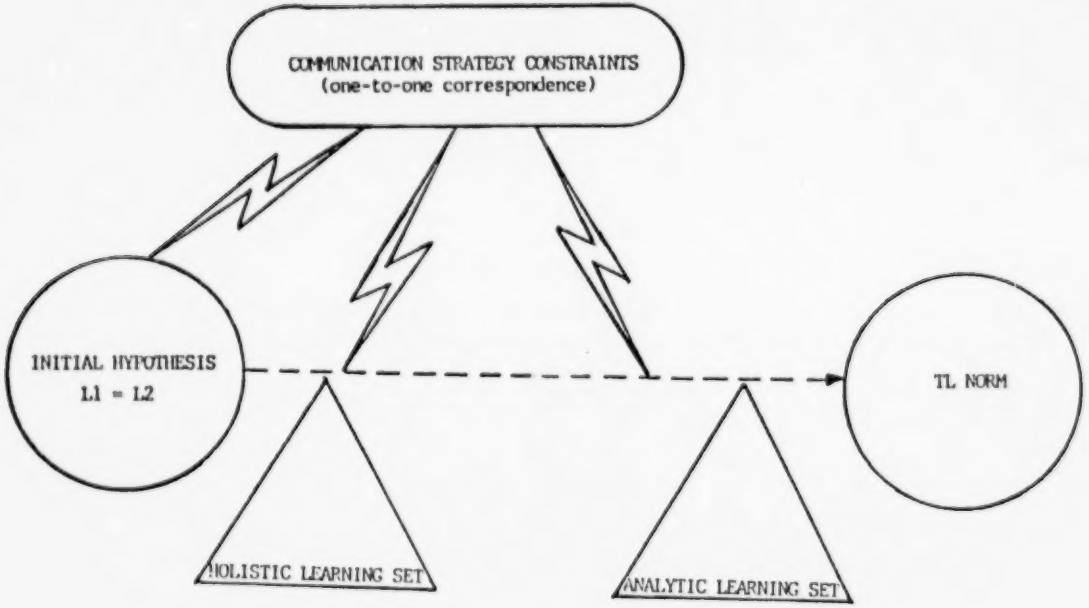

FIGURE 1: Psychological Process of Interlanguage Development

constraints, which are persistent and prevalent in the developmental process of interlanguage.

Finally, at early stages, L2 learners are likely to form specific exemplars that tend to restrict the meaning to a specific category of a word, which keeps them from investigating other categories of the word (Tanaka, 1983). As a result, they tend to use indefinite articles as the numeral 'one' and definite articles as the demonstrative 'that.' However, the semantic discrepancy between Japanese and English causes the learners to make substitution errors that supply definite articles in obligatory contexts for indefinite articles, or vice versa. In addition, Japanese has context-dependent structure, while English has syntax-dependent structure. Therefore, the L2 learners, due to the difference of structures between Japanese and English, are more likely to produce this type of error. To put it in another way, this type of error seems to remain persistent and prevalent throughout the whole process of their interlanguage development due to constraints from both lexico-semantic and discourse domain.

The psychological processes of interlanguage development can be illustrated as in Figure 1.

Based on these assumptions the following hypotheses were tested:

Hypothesis I: Co-occurrence Errors

> At the beginning level, Japanese adult ESL learners will often make co-occurrence errors in the use of articles. This type of error will sharply decrease at the early intermediate level.

Hypothesis II: Word-order Errors

> At the beginning level, Japanese adult ESL learners will frequently produce word-order errors in the use of articles. This type of error will almost disappear at the early intermediate level.

Hypothesis III: Underextension Errors

At the beginning level, Japanese adult ESL learners will make underextension errors in the use of articles. This type of error will be sharply reduced by the early advanced level, but will persist in the interlanguage.

Hypothesis IV: Overextension Errors

From the intermediate level to the early advanced level, Japanese adult ESL learners will prominently produce overextension erors in the use of articles. After that these errors will tend to decrease, but will persist in the interlanguage.

Hypothesis V: Substitution Errors

At the beginning level, Japanese adult ESL learners will make substitution errors in the use of articles. This type of error will be the most persistent, though it will decrease gradually toward the final stage of the interlanguage.

THE EXPERIMENT

A. Subjects

Three hundred fiftythree subjects (Ss) were selected from a sample of 800 high school and university students in Japan. Most of these Ss had no experience of living in English-speaking countries, and all had taken English lessons for more than four years. The selection was made on the basis of the Takahashi-Tanaka English Proficiency Test (Takahashi and Tanaka, 1983), which was developed to measure Japanese learners' levels of proficiency in English. It consists of two sections: (I) the CLOZE TEST and (II) the ERROR RECOGNITION TEST.

In designing this study, we assumed that the frequency of the five types of errors in the use of articles depends upon each stage in the

developmental process of interlanguage, and that the degree of English proficiency is correlated with the stages of the developmental process. Accordingly, we decided that in selecting 353 Ss in our experiment we would divide them into nine levels based on their English proficiency scores.

In order to exclude from our study students who could be expected to provide too many no-answers to avoid errors, as well as students who would not consistently take the tests, it was decided that, in order to be selected as a subject in this study, a student would have to respond to more than 10 per cent of the items in each test. Of the 800 students who took the English Proficiency Test, 75 per cent of them took the main tests. Finally, 353 Ss who had fulfilled the criterion were selected from them. The mean age of the Ss (133 males, 220 females) was 19.3 years. Two per cent of the Ss had the experience of residence in English-speaking countries: the mean length of their residence there was 3.4 months.

B. Design and Materials

In constructing the instruments to be used in this study, we considered whether the test had enough validity and reliability, and whether the test met the requirement of practicability and instructional value (Oller, 1979; 4). In order to enhance the validity of the tests used in this study, we provided ourselves with both judgmental and productive tests. Hence, we employed three kinds of objective tests in the judgmental category, and an English essay test as a productive type. In the process of material construction, we regarded discourse factors as of major importance. Furthermore, we contexualized each item of the three objective tests with a short passage in Japanese. This enabled the Ss to answer each item by adjusting the English sentence so as to conform to the contexts of situation given in Japanese. In this light, all instruments used in this study were also pragmatic tests.

According to Oller (1979; 71), 'at present, pragmatic testing seems to provide the most promise as a reliable, valid, and usable approach to the measurement of language ability.'

In addition, the context in which articles are used may influence the number of errors. Accordingly, we considered (i) the length of text and (ii) the location of nominals in the sentence. Thus we endeavored to keep the length of each text constant as much as possible. We also provided equal numbers of items in which articles were used in three different positions: initial, after *be*, and somewhere else in the sentence. Moreover, we composed pairs of items in which articles were used in similar contexts in order to check for cases where students' responses were determined by chance.

The reliability of a test depends upon the number of items in each test. Thus, the more items, the more reliable is the test. Increasing the number of items, on the other hand, increases the subject's fatigue, testing effects, and temporal constraints on administering the test. All of these defects result in a decrease in practicability. Taking these points into consideration, we constructed a total of 117 items, one third of which were control test items, for three different objective pragmatic tests.

Another aspect of reliability depends on the internal consistency of items in the test. For this purpose, we provided six different sequences of items in each test in order to keep each item independent. Specifically, we first constructed groups consisting of six or eight items in each test. Then we put these groups into six different sequences as illustrated in Table 1. It was expected that these six different sequences of items would be eliminate the effect of the position of items on each test. Considerations of practicability require that the range of items in each test be limited to less than sixty. The three objective pragmatic tests used in this study included: (1) an error-correction test consisting of forty five items. It was expected that this test would minimize

TABLE 1

SIX ALTERNATIVE SEQUENCES IN EACH TEST

WORD-ARRANGEMENT TEST	MULTIPLE-CHOICE CLOZE TEST	ERROR-CORRECTION TEST
(1) a b c	(1) a b c d e f g h i	(1) a b c d e f
(2) a c b	(2) c d f b h a e i g	(2) b d f a c e
(3) b a c	(3) d e a c b h i g f	(3) c a e b f d
(4) b c a	(4) f g b i a c d e h	(4) d f b e a c
(5) c a b	(5) g i e h f b a d c	(5) e c a f d b
(6) c b a	(6) i h g f e d c b a	(6) f e d c b a

TABLE 2

DESIGN OF THREE OBJECTIVE PRAGMATIC TESTS

	ERROR-CORRECTION TEST				
POSITION	CO-OCCURRENCE	WORD-ORDER	UNDEREXTENSION	OVEREXTENSION	SUBSTITUTION
I	7 8	15 16	3 4	13 14	9 10
II	11 12	1 2	19 20	5 6	17 18
III	21 22	33 34	28 29	44 45	23 24
CONTROL	25 26 27	30 31 32	38 39 40	41 42 43	35 36 37

	WORD-ARRANGEMENT TEST	
POSITION	CO-OCCURRENCE	WORD-ORDER
I	4 5	18 19
II	6 7	10 11
III	8 9	15 16
CONTROL	1 2 3	12 13 14

	MULTIPLE-CHOICE CLOZE TEST		
POSITION	UNDEREXTENSION	OVEREXTENSION	SUBSTITUTION
I	1 2 15 16	26 27 30 31	37 38 48 49
II	6 7 10 11	22 23 35 36	41 42 53 54
III	8 9 17 18	24 25 28 29	39 40 46 47
CONTROL	3 4 5 12 13 14	19 20 21 32 33 34	43 44 45 50 51 52

I: INITIAL POSITION II: AFTER BE III: SOMEWHERE ELSE

random answers because the Ss would have to grasp the meaning of the sentences to correct the errors in question. (2) a word-arrangement test consisting of eighteen items. This test was used to elicit co-occurrence and word-order errors peculiar to Japanese adult ESL learners. It was expected that this test would minimize avoidance

phenomena because Ss could make sentences with the limited selection of words provided for each item. (3) a multiple-choice cloze test consisting of fifty-four items. This test was used to elicit underextension, overextension and substitution errors. It was expected that this test would elucidate the learner's cognitive strategies because questions in this test required the subjects to understand extralinguistic as well as linguistic contexts. Thirty-three per cent of these items were control items. They were randomly inserted among the experimental test items. The design of these objective pragmatic tests is illustrated in Table 2.

Finally, the present study included a twenty-minute English essay test. This test was the only productive test in this investigation; it required the learner not merely to use the language in the normal contextual sequences, but also to relate extralinguistic context to sequences of elements in English.

Concerning instructional value, we endeavored to motivate the Ss through their curiosity, sense of challenge, and imagination. Hence, 117 items consisted of normal daily conversations in student life by several Japanese students and two American women. They have relevance to each other in content. It was expected that the content would minimize the students' awareness of testing and motivate their performance in the test.

C. Testing Procedures

Each subject in the present study took four kinds of elicitation tests in two different class hours. The six different sequences of items in the three objective pragmatic tests were randomly delivered to nine levels of Ss. They first answered a word-arrangement test and a multiple-choice cloze test in the classroom. The following week they took an error-correction test and an English essay test in the classroom.

D. Statistical Analysis

The data of the three objective pragmatic tests consisted of 117 responses. The elicited responses were first classified into three categories: correct, acceptable (i.e., deviant but acceptable cases in English), and incorrect (not acceptable in English). The first two categories were counted as zero, and the last category (i.e., incorrect responses) were counted as one.

As for the reliability of these objective pragmatic tests, Kuder-Richardson's coefficients of reliability were calculated for each of them. A number of analyses of variance (one-way ANOVA and two way ANOVA) were carried out on the interaction between TYPE and LEVEL, and between POSITION and LEVEL, in order to errors. In addition, the mean proportion of errors and chi square (X^2) were calculated on the level of significance in the frequency of errors among three different positions of articles used in the sentenses respectively. Finally, for the analysis of the English essay test, two native speakers (an American male graduate and a British female graduate students), counted the number of NPs and errors in each subject's essay, and classified these errors into five types of error in the use of articles. The agreement in their judgments was tested by Pearson's coefficient of correlation (r). Also the T-values were calculated for three levels of significance of the coefficients (r).

E. Results and Discussion

It was demonstrated that each instrument used in the present study had a very high reliability. Thus, the coefficients of reliability in the word-arrangement test, multiple-choice cloze test, and error-correction test were 0.74, 0.85, and 0.96 respectively. In addition the data analyzed for this study provided clear support for each hypothesis

for five types of error in the use of articles as seen in table 3 and table 4. Here, all T-value's contrasts in group means of five types of error in the use of articles were significant. This result supports the claim that each type of error in the use of articles shows the contrast described in each hypothesis regarding these errors.

TABLE 3

F-VALUES FOR EACH TYPE OF ARTICLE ERROR AND T-VALUES

FOR CONTRASTS IN GROUP MEANS BY ARCSINED PROPORTIONS

IN WORD-ARRANGEMENT TEST & MULTIPLE-CHOICE CLOZE TEST

Types of errors	F-value	Probability	T-value	Probability
Co-occurrence Errors	19.1900	0.00000	-4.9961	0.00000
Word-order Errors	31.7015	0.00000	-7.7936	0.00000
Underextension Errors	85.6645	0.00000	-17.5251	0.00000
Overextension Errors	32.7934	0.00000	8.9068	0.00000
Substitution Errors	50.1584	0.00000	14.8879	0.00000

TABLE 4

F-VALUES FOR EACH TYPE OF ARTICLE ERROR AND T-VALUES

FOR CONTRASTS IN GROUP MEANS BY ARCSINED PROPORTIONS

ERROR-CORRECTION TEST

Types of errors	F-value	probability	T-value	Probability
Co-occurrence Errors	19.1900	0.00000	-4.9961	0.00000
Word-order Errors	60.0850	0.00000	-8.4689	0.00000
underextension Errors	77.2188	0.00000	-14.6479	0.00000
Overextension Errors	9.4234	0.00000	2.6903	0.00750
Substitution Errors	73.6454	0.00000	14.5950	0.00000

The resulting data provided clear support for each hypothesis. Thus, co-occurrence errors and word-order errors sharply decreased at level 3 (viz. at the early intermediate level). Underextension errors were sharply reduced from level 1 to level 4, and persisted in the interlang-

uage at level 9. Overextension errors were predominant after level 4 (viz. at the intermediate and the advanced level), and persisted in the interlanguage. Substitution errors were also sharply reduced from

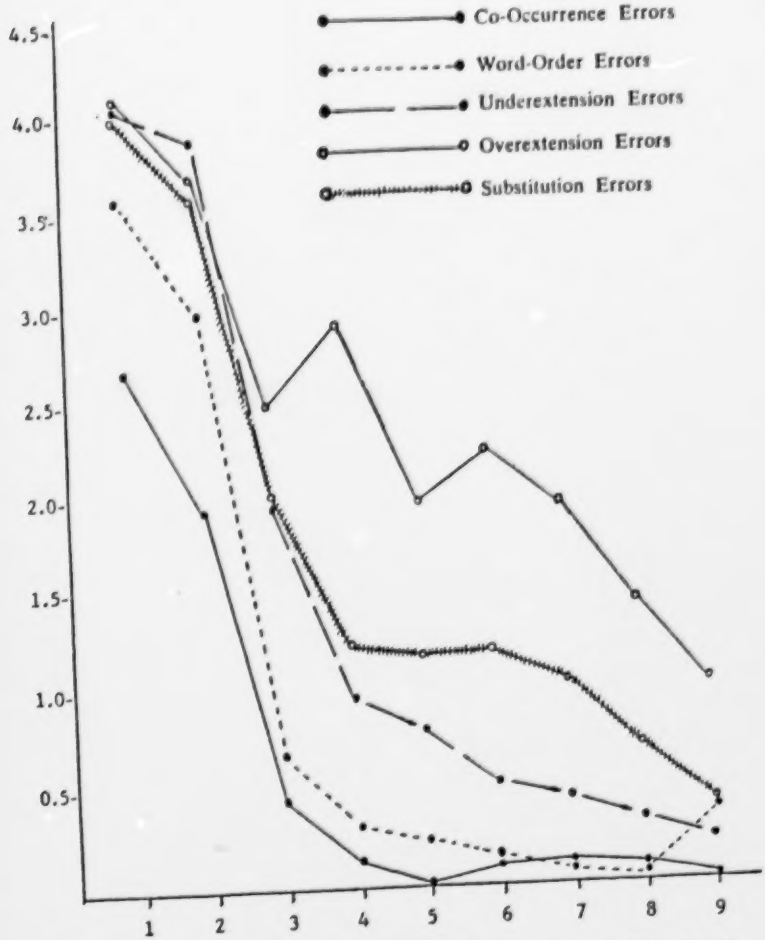

Figure 2: Mean Proportions of Five Types of Error across Nine Levels.

level 1 to level 4 and persisted at level 9. These results are displayed graphically in Figure 2 above.

The data of the productive test supported the results from the data of the judgmental tests, except that underextension errors were more prominent in the production data, while overextension errors were

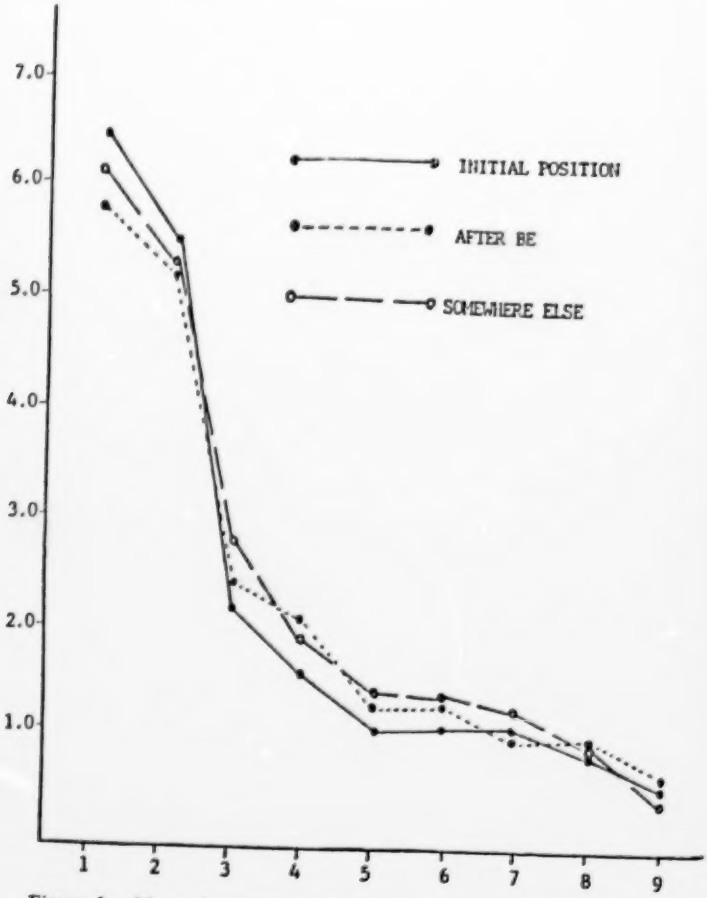

Figure 3: Mean Proportions of Each Position across Nine Levels

more prominent in the judgmental data[1]

The main effect of POSITION was not significant ($F[2, 1394] = 1.80$, $p.>.05$). However, a significant interaction was found between POSITION and LEVEL ($F[16, 1394] = 2.59$, $p.<.01$). Figure 3 shows the mean proportion of each position in the sentence of the articles used across nine levels.

The effect of POSITION in the sentence of the articles used can be disregarded. However, the difference between the nine levels of proficiency is striking. Above all, the most drastic change occurs during the beginning level. The intermediate learners show a plateau in the acquisition of the use of articles.

As for the judgment of errors in the use of articles in an English essay test, the coefficients of correlation in the number of errors counted by two native speakers were fairly high. That is, at the three levels of proficiency, (elementary, intermediate, and advanced), the coefficients of correlation were 0.42, 0.75, and 0.69 respectively. The level of significance in the sample of the coefficients of correlation were all significant ($df=98$, $p < 0.01$) The percentage of errors in the use of articles within noun phrases occurring in the essay test at each level of proficiency is given in Table 4.

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1. The contrasting results of the judgmental and productive tests offer us important insight into the interlanguage strategies of the learner, but they may also be related to differences in the conditions imposed on the subjects by the distinct nature of each of the two types of test.

Future research in this area should be done with due consideration for the following points: (1) the number of Ss in each level should be equalized; (2) the number of items in each objective pragmatic test should he expanded. In order to test the effect of position we would need to provide at least six alternatives for each item in the questions. Furthermore, a more inclusive testing of plural as well as singular forms is required.

TABLE 5

PERCENTAGE OF ERRORS IN THE ESSAY TEST
COUNTED BY TWO NATIVE ENGLISH SPEAKERS

LEVEL	AMERICAN	BRITISH
BEGINNING LEVEL	14.04 %	10.27 %
INTERMEDIATE LEVEL	6.85 %	6.66 %
ADVANCED LEVEL	7.83 %	6.31 %

TABLE 6

PERCENTAGE OF EACH TYPE OF ERROR IN THE ESSAY TEST
COUNTED BY TWO NATIVE ENGLISH SPEAKERS

LEVELS		COOC	WORD	UNDX	OVRX	SUBS
BEGINNING LEVEL	a	2.86	0.00	48.00	26.29	22.81
	b	3.13	0.78	70.31	16.40	10.16
INTERMEDIATE LEVEL	a	0.68	0.00	55.41	22.30	21.62
	b	0.00	0.00	55.56	22.22	22.22
ADVANCED LEVEL	a	0.96	0.00	61.72	13.40	23.92
	b	0.00	0.00	65.29	16.47	17.06

a: American b: British

Table 5 shows the number of errors of each type counted by the two native speakers of English. There are very few co-occurrence and word-order errors in the table as compared with other types of error. Since these types of error are elementary errors, it may be because the elementary students of English employed simplification or avoidance strategies in their writing as their communication strategy. In fact, comparing the number of words used in their writing, the average

was 27 words at the elementary level, while it was 107 words at the advanced level. Here, underextension errors are the most predominant of the three types of persistent error across all levels of proficiency. Since in such integrated linguistic activities as composition, the students are more concerned with expressing what they want to say, their monitors seem to be less operative in the use of articles as compared with the situation developed in the objective pragmatic tests.

F. Pedagogical Implications

Interlanguage analysis has relevance to teaching in the following three categories: (1) correction of error in the classroom, (2) providing grammatical explanations, and (3) designing materials and curricula (Brown, 1980). Hence, we briefly describe what the present study implies about these three points in the following:

(1) Teaching Guidelines

According to proponents of the Natural Order Hypothesis, correcting errors, whether it is systematic or random, does not seem to be effective in enhancing the learning of corrected structures (Dulay, Burt and Krashen, 1982). However, adult learners who have the ability of generalization and abstraction, as seen in Schliemann (1822–1890) are likely to learn an L2 quickly through conscious practice and learning with correction. Therefore, some correction is beneficial, just as mothers correct their children's speech. The important point here is that the teacher should not emphasize the learner's errors, but the correct patterns. Moreover, as Brown (1980: 150) says, 'minor errors that do not hinder communication are sometimes best left uncorrected so the learner is free to continue, uninterrupted, with a thought or pattern'. As for the correction of errors in the use of articles, the results in the present study imply that correction for elementary students should focus on co-occurrence and word-order

errors, correction for intermediate students should focus on under-extension errors as well as the elementary errors, and correction for advanced students should focus on overextension and substitution. Although the following suggestion does not directly result from the present study, it would help toward planning the teaching of English articles. The learner at the presystematic stage tends to depend on his NL as a learning strategy or a communication stragegy. Hence, in order to develop more meaningful practice, and to elucidate the differences between L1 and L2 in the high school curriculum, we should introduce the use of articles through comprehension activities in the flow of thought from L2 to L1 because this flow of thought seems to be more free from the interference of the L1 than vice versa, while the college or university curriculum should be focused on production from L1 to L2.

(2) Procedures of Grammatical Instruction

In the case of teaching the use of articles, it is necessary for us to present the core meaning of each item as well as to describe the semantic discrepancies between each article and the linguistic alternatives in Japanese. In this light, an effective presentation sequence of each item is to follow the order of (1) *the*, (2) *a(n)*, and (3) ϕ. This sequence may be opposed to the conventional syllabus design. However, we sometimes need to break rules (Fanselow, 1983). Of the three items, definite articles are used with the highest frequency. Finally, since the definite article can be used for almost all nouns in English, if they could acquire the correct pattern of paradigmatic relation in English through the use of definite articles, the elementary learner would probably be free from making errors such as co-occurrence and word-order errors. As a result, they are likely to be motivated to recognize the correct structure of the English NP. The selective process of indefinite articles is likely to be the most complex, and take

time to be retrieved. However, once they have set up the structure of the English NP in their minds, intermediate learners would more likely need to contrast the *the*-form with the *a(n)*-form in order to use the articles.

The reason why the zero form should be presented last in the sequence is that the concept of the zero article is more abstract and hard to grasp. To put it another way, in order to comprehend the principle of zero articles, we need a considerable amount of the corpus of the language accumulated in our mind.

(3) Instructional Design

The focus of constructing the materials and curricula in the second language is on the contrast between L1 and L2. In this vein, Fries (1945: 9) formulated the need for contrastive analysis as follows:

> The most efficient materials are those that are based upon a scientific description of the language to be learned carefully compared with a parallel description of the native language of the learner.

The proponents of error analysis suggest that language programs which stress similarities between NL and TL facilitate learning, while the proponents of contrastive analysis recommend programs which focus on differences between the two languages in contrast. Although we are liable to lose the general view of the L2 if we emphasize too much the differences between L1 and L2 (Marton, 1981), it is not necessarily true that the item which has a higher degree of similarity between L1 and L2 facilitates learning. In addition, the sequence from similar items to contrastive items does not always facilitate language learning (Politzer, 1968).

In order to provide students with more meaningful practice based on the principles of human learning and findings from research on interlanguage development, it is to be desired that we should draw up

a teaching program which focuses on comprehension (listening and reading) activities in high school, and on production (speaking and writing) activities in college or university. Such organization of curriculum acts on the principle of human information processing, reduces anxiety on the part of students, and motivates them for L2 learning. Along this line, when we present the use of articles, we should call the learner's attention to similarities and differences between the articles and the linguiistic alternatives in Japanese, and the correct use of articles.

Finally, another important matter we should consider regarding instructional design is the mode of presenting each item among the articles. If the syntactic structure in Japanese corresponds to the use of articles in English, teachers should consciously grasp such a tendency on the part of the learners, and lead them to learn by making up what they lack. In this connection, it is suggested that when presenting nouns as new words, we should present them in the list as an NP including alternative articles as follows:

the (ϕ) winter, the (an) orange, ϕ New York

The reason behind this proposal is that in Japanese, there is no need to check whether a noun is singular or plural or whether it is countable or uncountable, in order to use it. Therefore, it is very difficult for most Japanese to distinguish countable nouns from uncountable nouns precisely.

G. Concluding Remarks

One of the areas in which Japanese learners of English make serious errors is the use of articles. This is a consequence of the multiple burdens they have in learning to use the English articles: (1) the Japanese language has no article system; (2) it is more dependent on the context of situation than English is (cf. E. Hall, 1977); (3) it has a more flexible word order than English (ct. Kuno, 1973; Tokieda,

1950); (4) most Japanese learn English in acquisition-poor environments; and (5) since both American English and British English have been taught with equal authority, the subtle differences between these two varieties of English have aggravated the indeterminacy in the use of articles that is experienced by Japanese learners.

In the present study, we analyzed the types of error in the use of articles made by Japanese adult ESL learners in Japan. The results show that there are five types of error in the use of articles produced by Japanese adults. Among them, co-occurrence and word-order errors are produced especially at the elementary stages, while under-extension, overextension and substitution errors remain persistent in the interlanguage development process. These findings have important pedagogical implications regarding the organization of the English-language syllabus in Japanese schools.

In this study an effort was made to test hypotheses empirically. In developing the theoretical and practical tools for studying language transfer, as Weinreich explicitly said, interlanguage analysis should be done according to the most rigorous standards in different socio-cultural settings between the two languages in contrast." New research will then become more systematic and the results more fully comparable" (Weinreich, 1953: 115).

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(Grduate School, Columbia University)

Harumitsu Mizuno

4-12-106, 2-chome, Oyamada-Sakurada
Machida-shi, Tokyo, 〒194-02